ontario hydro

700 University Avenue, Toronto, Ontario M5G 1X6

Note: Recipients who have an Economic Outlook binder should place this report under the tab titled "Economic Outlook: Long Term". Those users who are on the Cost Escalators and Alternative Scenarios distribution lists will receive those reports in November.

MEMORANDUM

ALL USERS

September 1991

File No.: 706.01A

LONG-TERM ECONOMIC OUTLOOK - ANNUAL REVIEW

OVERVIEW

This forecast reviews and updates the Long-Term Economic Outlook issued in September of 1990. The revised forecast is very similar to last year's Outlook. It calls for a continuing decline in the trend rate of growth of Ontario GDP, to an average rate of about 2.5 percent per year at the end of the forecast horizon, due to slower growth in the labour force. It continues to assume that inflation will remain moderate, rather than declining sharply as called for by the Bank of Canada's targets. Real interest rates are expected to decline gradually, and the Canadian dollar is expected to return to a more sustainable value in the area of 80 U.S. cents.

The actual changes in the most likely forecast scenario are minimal, but users should be aware that there are a number of looming uncertainties which make long-term forecasting even more hazardous than usual at the present time:

- The threat of a breakup of Canada has not been factored into the forecast. Our analysis suggests that its long-term impact on the Ontario economy would be relatively small, although it might have substantial financial consequences in the short term.

- Radically stringent environmental policies (especially those aimed at preventing the greenhouse effect) could seriously constrict economic growth. At the present time, we view adoption of such stringent policies as unlikely in Ontario.

- The industrial competitiveness of the Ontario economy has been called into question, particularly since the most recent provincial election. Our analysis suggests that these concerns primarily represent an over-reaction to short-term problems, such as the over-valued dollar, high wage levels and difficulty in attracting capital investment.

The changes in the key indicators are summarized in the following table:

Changes from the May 1991 Outlook***

	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015
Ontario Real GDP Growth*	-0.1	-0.1	-0.1	-0.1	0
CPI Inflation Rate	0	0	0	0	0
Government Bond Rate	+0.3	+0.6	+0.4	+0.5	+0.3
Canadian Dollar**	+0.6	0	0	0	0
Real World Oil Price*	-2.1	-0.3	-0.1	0	0
Real Natural Gas Price*	+0.3	-1.6	+1.1	+1.2	0

* Difference in growth rate (percentage points) from previous forecast.

** Change in US cents relative to previous forecast.

*** Changes in energy prices are from September 1990 Outlook.

"Real" values are computed by subtracting the inflation rate.

If you have any questions concerning the Economic Outlook, please feel free to call me (6375) or Donna Gustafson (6391). Readers who would like more information on the reasoning behind the forecasts may obtain technical background papers on the Ontario demographic and sectoral forecasts by calling Cecilia De Borja (6394).

Mitchell P. Rothman
Chief Economist
Economics and Forecasts Division

PSS/cdb

91-06977/

LONG-TERM ECONOMIC OUTLOOK

ANNUAL REVIEW

September 1991

==========

This Review replaces the September 1990 Long-Term Economic Outlook. The forecasts contained in it have been approved by the Vice-President, Corporate Planning. They have the status of Corporate Predictions as defined under Section 7 of the OOOH Manual.

Contributors: P.S. Spiro, M. Angastiniotis, D. Gustafson, R. Hogue, S. MacKay, A. Zerek and C. De Borja (stenographer).

Please direct any questions to
Mitchell P. Rothman (6375) or Donna Gustafson (6391).
For extra copies, call 6394.

==========

File No.: 706.01A

September 1991

1. Sources of Ontario Economic Growth

	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015
Employment growth*	1.6	2.5	1.8	1.6	1.5	1.2	0.9
Real output per worker*	1.9	1.2	1.1	1.7	1.3	1.4	1.5
Total output growth (GDP)*	3.6	3.8	3.0	3.3	2.8	2.6	2.4

* Average annual percent change.

Growth in GDP (the total output of all goods and services produced) occurs because of growth in the supply of factors of production (the labour force and the stock of physical capital) and because of improvements in productivity. Productivity growth is mainly due to technological improvements and increases in the educational and skill level of the work force. In the short term, productivity can be adversely affected by supply shocks and monetary disturbances, as in the 1970s. During the 1970s productivity growth was near zero, mainly due to oil price shocks and high inflation and unemployment, but more normal productivity growth resumed in the 1980s. Future improvements in productivity are likely to average about 1.5 percent per year, in the absence of major supply shocks. There will be a tendency for the rate of labour productivity growth to increase as the slower growth of the work force promotes more advanced, automated production techniques. As a result of moderating labour force growth, aggregate output in the economy is forecast to grow slowly compared to historical rates, but the growth in productivity will produce better growth in per capita real incomes.

The main factor influencing the expected trend of real GDP growth is slowing population and labour force growth. The fall in the fertility rate to below replacement levels during the past twenty years means that the increase in the work force in the next twenty years will be relatively modest. The fertility rate fell dramatically, to an average rate of about 1.7 children per woman during her lifetime, well below its replacement level rate of 2.1. The sociological factors which have contributed to lower fertility rates are expected to maintain rates below replacement level in the future. Even if an unforeseen large increase in the birth rate suddenly occurred, it would have no direct impact on the size of the work force for about twenty years.

In addition to the natural increase in the size of the working age population, the growth in the total labour force is influenced by the number of immigrants into Ontario and by the proportion of the population which chooses to work. Both of these factors are likely to contribute to some increased growth, but not enough to offset the overall declining trend. A detailed description of our demographic forecasts may be found in a separate report entitled *1991 Ontario Demographic Forecast*, which is available upon request.

2. Ontario's Industrial Prospects and Problems

	1970	1980	1985	1990	1995	2000	2005	2015
Primary Sector*	6.7	4.7	4.0	3.5	3.2	2.9	2.6	2.2
Manufacturing Sector*	26.9	25.6	27.2	25.5	25.2	24.8	24.5	23.8
Service Sector*	50.1	54.4	53.9	55.6	57.0	58.0	58.9	60.7

* Percentage share of provincial GDP (eg, the importance of these sectors as direct sources of income for Ontarians)

The composition of GDP growth is important for predicting the growth in demand for electricity, because some industries and sectors are considerably more electricity-intensive than others (meaning that electricity represents a relatively larger share of the total cost of that industry's production).

There have been widely expressed fears that Ontario will become deindustrialized, due to a combination of fierce international competition (exacerbated by a widening North American Free Trade Agreement, which would include Mexico) and our own lack of "competitiveness." In dealing with this issue, it is important to avoid confusing short-term price competitiveness problems with long-term productivity problems.

Two short-term factors have adversely affected Ontario's competitiveness. A rapid, large increase in the value of the Canadian dollar has made many of Canada's exports uncompetitive, particularly since Canadian wages have been rising faster than those in the United States. Combining these two factors by expressing Ontario wages in U.S. dollar terms, we find that Ontario manufacturers have suffered a huge 26 percent increase in labour costs relative to their U.S. counterparts since 1985. However, these are not permanent problems, nor terribly difficult ones to overcome.

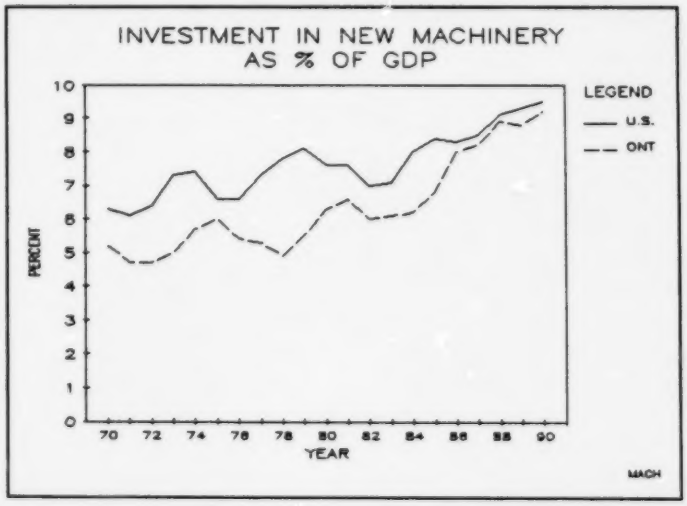
Ontario wages rose rapidly because the Ontario economy was booming and labour was in short supply. The Canadian dollar is high because the Bank of Canada has been using high interest rates to prevent the tail end of that boom from becoming excessively inflationary. In 1990 and 1991 we have been enduring a recession which has led to rising unemployment. Eventually, market forces will cause either Ontario wages or the dollar (or, most probably, a combination of both) to fall relative to their U.S. counterparts, returning us to price competitiveness. Industrial Product Prices in Ontario have been experiencing very low rates of increase in the last few years. Since these price increases have undercut their U.S. counterparts, the impact of the rising dollar has been partially offset.

In the long run, foreign competition need not be a threat to employment (or industrialization) in Ontario, because the exchange rate can depreciate to whatever level is necessary to make Ontario competitive. Foreign competition can threaten standards of living in Ontario in the long run, however. The standard of living depends on long-term productivity growth, so the interesting question is whether Ontario will have the capital investment and the technological progress which enable real per capita incomes to rise. If Ontario cannot compete, then it will not get the capital investment nor make the technological progress. Whether it will or not will be, to some extent, a function of government policies. Governments have to foster a climate in which businessmen have confidence in the future, and they have to take initiatives in education, skills training, and infrastructure investment which are conducive to productivity growth.

Ontario's NDP government has been having serious public relations problems on the effect of its policies in this regard, especially due to its budget and proposed labour legislation, which have led some people to express concerns about Ontario's future. In this forecast, no adjustment is made to long-term growth because of the election of a new government in Ontario. Such uncertainties about the impacts of the new government's policies do add to overall forecast uncertainty. But this government is unusually committed to the educational and infrastructure investments which are necessary for growth. The present Ontario government gives every indication that it wants to be reasonable and pragmatic, and experience in other jurisdictions shows that governments with similar orientations have been able to work well with business once the initial uncertainties are cleared away.

This pessimism about Ontario's industrial future predates both the present Ontario government and the Free Trade Agreement, though both have tended to widen it. The pessimists opposed the Free Trade Agreement because they fear that Ontario cannot compete in manufacturing with the United States. In fact, as our earlier studies have shown, Ontario was already competitive in many industries at the time the Agreement was negotiated. Subsequent changes in the value of the Canadian dollar and in relative wage rates have reduced that competitiveness, but these factors are precisely those which market forces can be expected to reverse.

By some indicators, Ontario has improved its long-term competitive position over the last few years. The figure here shows that basic industrial investment in Ontario (compared to the United States) has been much stronger in the past few years than in any other period for which we have data.



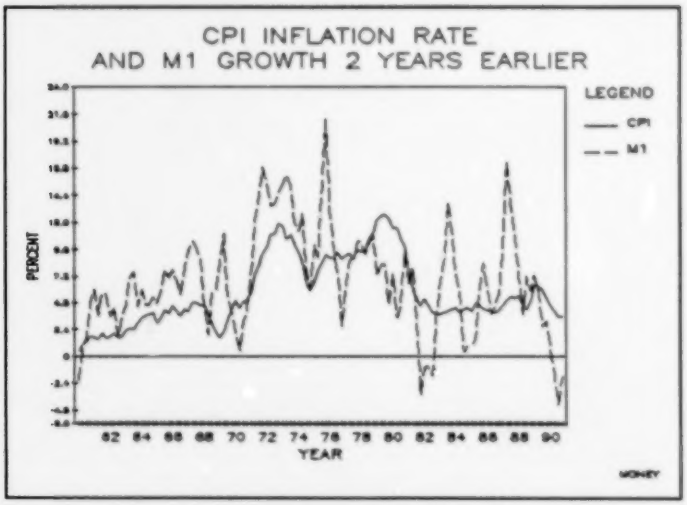
The real test will come in the mid-1990's, when present industrial capacity is more fully utilized. Investment in capital and in education and their quality are the factors which will ultimately determine the future rate of growth of productivity, and therefore per capita income, in Ontario. The amount of savings by Ontarians themselves should be quite adequate to finance the capital investment needed to meet our forecast GDP growth rates. Even so, this does not guarantee that Ontario can attract the investment it needs to update and enlarge its industrial base. To do this it is necessary that government deficits are kept under control, and the investment climate is sufficiently good that *Ontarians* will not prefer to invest their savings in some other jurisdiction such as the United States.

The growth rates in this forecast are modest by historical standards, reflecting a number of considerations such as international competition, the impact of expected future environmental regulations, and uncertainties about future government policies. However, they are well within the capacity of the people of Ontario to attain.

3. Inflation - Consumer Price Index*

1981 - 1985	7.4%	2001 - 2005	5.0%
1986 - 1990	4.5%	2006 - 2010	5.0%
1991 - 1995	4.2%	2011 - 2015	5.0%
1996 - 2000	5.0%		

* Average annual percent change for Ontario



Inflation is the most uncertain variable in a long-term forecast because it is determined not by fundamental technological factors but by discretionary government monetary policy. These monetary policies can change substantially with changes in government. The chart on the right shows how volatile money supply growth has been in Canada. Emphasizing this uncertainty is the most useful function that a forecaster can provide, to alert managers that they should not make plans whose success is highly dependent on the inflation rate remaining unchanged. Because long-term inflation is so hard to predict, users of the forecast should be aware of the danger in making firm-price long-term commitments based on these forecast values.

For policy simulation purposes, the Economics and Forecasts Division suggests three scenarios which cover the plausible range for long-term inflation in Canada: high inflation (averaging 7.5 percent), medium (averaging 5 percent), and low inflation (averaging 3 percent). The medium scenario is most likely to be closest to the actual outcome.

The designers of Canadian monetary policy at the Bank of Canada would strongly condemn this choice. They have established an official target of reducing CPI inflation to 2 percent by the end of 1995, with the possibility of reducing it all the way to zero thereafter. Bank of Canada officials, however, made similar promises (albeit in a less official way) five years ago, and currently the inflation rate remains just under 6 percent. One cannot deny the very firm stance taken against inflation in the last two years by the current management of the Bank of Canada, but it would appear that there are too many obstacles in the way of their achieving anything close to a 2 percent inflation rate in 1995.

The first problem is that the current "relatively" good performance of inflation, being kept to just under 6 percent including the GST, is due to the recession from which the economy is just beginning to emerge. Recessions usually repress inflation for a year or two after they end, but then it tends to

rise again. The 1990-91 recession does not promise to be long or deep enough to achieve a sustained reduction in the inflation rate, and this problem is likely to be exacerbated by some additional indirect tax increases by hard-pressed provincial governments. There is also a substantial risk that the currently overvalued Canadian dollar will fall. To achieve its 1995 target the Bank of Canada would have to initiate another round of interest rate increases leading to another recession around the time of the next federal election, which is politically improbable.

Another inflationary risk is the effect of Quebec's movement toward sovereignty. Economic analysis of trading relationships suggests that Quebec's separation would have relatively little effect on Ontario's long-term growth potential, and in the medium term may increase it due to increased immigration to Ontario by Quebec's remaining anglophones. However, Quebec sovereignty creates risks of higher inflation for two reasons. The short-term financial market reaction might cause a drop in the value of the Canadian dollar, which is inflationary. If some form of sovereignty (or increased provincial involvement in Bank of Canada policy) occurs it would probably lead to a somewhat looser monetary policy, since the provinces have generally been critical of Ottawa's tight monetary policy.

4. Interest Rates (%)

	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015
20-year Bond Rate	13.0	10.1	9.9	10.0	9.5	9.2	9.5
Real Bond Rate*	8.0	5.1	4.9	5.0	4.5	4.2	4.5
Real Treasury Bill Rate	4.8	5.8	4.6	4.0	3.5	3.2	3.5

* Calculated by subtracting the 20 year forecast of the CPI inflation rate.

Real rates of interest have been well above historical averages all through the 1980s because of a combination of tighter central bank monetary policies (to control inflation) and high levels of government borrowing, and they are expected to decline only gradually. The liberalization of eastern Europe has also contributed to higher interest rates recently. In particular, Germany has been an important world lender, and it is expected that a large fraction of western Germany's savings for the next several years will be invested in eastern Germany, putting upward pressure on world interest rates.

Government deficits in the United States have declined considerably from their peak, but the rate of decline appears to have stalled. Moreover, the build up of debt resulting from past deficits has resulted in a large increase in the economy's debt to GDP ratio, which will take many years to reduce even if deficits continue to decline. Investors have to be offered a higher real return to make them willing to hold a larger share of their portfolios in the form of government debt. While real interest rates will remain relatively high for the next several years, they will be on a declining trend as these debt pressures diminish.

A gradually increasing personal savings rate is also expected to increase the supply of capital and contribute to lower real interest rates. It has been found that individuals tend to save a larger proportion of their income after the age of 45, and this factor should contribute to higher savings and

lower interest rates for the next ten to fifteen years. However, savings rates tend to decline after individuals reach retirement age. Once the baby boom generation starts to retire, savings rates could drop and make capital more costly. This concern is particularly severe for some of the other industrial countries, such as Japan and Germany, and it creates a likelihood that world real interest rates, which have a strong influence on Canadian rates, will start to rise again after the year 2005. We expect real interest rates to drop sharply following 1991. Real interest rates are expected to remain high by historical standards, however, partly because of high government debt levels. In hindsight, the money supply grew too fast in the 1950 to 1978 period, making interest rates too low, which contributed to a continuous rise in the inflation rate. We cannot expect to return to real interest rate levels that low.

5. Canadian Dollar Exchange Rate*

1976 - 1980	90.8	1996 - 2000	80.0
1981 - 1985	79.2	2001 - 2005	80.0
1986 - 1990	79.8	2006 - 2010	79.0
1991 - 1995	83.0	2011 - 2015	78.0

* Average value in US cents.

In recent years the Canadian dollar has been substantially overvalued due to large capital inflows generated by wide interest rate differentials between Canada and the United States. Some analysts have mistakenly questioned this link, on the grounds that the Canadian dollar has continued to be strong through 1991 even though interest rate differentials are lower than they were in 1990. However, it is the market's *expectation* of interest differentials which matters, and the very high differentials in 1990 were not expected to be sustained. Serious overvaluation of a currency can persist for several years, as was seen in the case of the U.S. dollar in the mid-1980s. However, overvaluation generates a large current account deficit, which must be financed by additional borrowing, and which eventually becomes unsustainable. This will inevitably happen for the Canadian dollar, but the timing depends partly on political factors which are difficult to call. The correct value for the Canadian dollar is estimated to be in the 75 to 80 cent range. In the very long term the dollar may decline somewhat further if Canada becomes a capital exporting country.

6. Environmental Policies

Concern over environmental degradation has increased again in the past few years, and government regulations to reduce emissions will impose greater costs on businesses over the coming decade. Measures called for under current and proposed legislation (including the Federal Government's "Green Plan") would divert a substantial amount of capital investment to environmental purposes. Other things equal, this would make measured real GDP in the year 2015 about 3 percent lower than it would be in the absence of these policies. (The quality of life would, of course, be higher, but this is not measured by GDP; nevertheless, it is measured GDP which is important for our planning, since load growth is driven by it.) Our analysis shows that environmental policies historically accounted for a .1% per annum reduction in real GDP.

A whole new class of environmental policies might be set up in the future to deal with the greenhouse effect. Depending on how these policies are imposed, they could substantially reduce potential real GDP growth. For a variety of reasons, our most likely scenario of GDP growth does not include any reduction in GDP growth due to greenhouse policies, such as carbon taxes, designed to reduce CO_2 emissions dramatically. First, it would be prohibitively costly for any one jurisdiction (such as Ontario or Canada) to impose anti-greenhouse policies until there is widespread international agreement on these policies. This will be very difficult to achieve. Secondly, there are, for Ontario, offsetting uncertainties which could boost real GDP growth. Ontario's climate would likely improve as a result of global warming. More to the point, the climate in some competing areas (especially the U.S. sunbelt) would likely deteriorate, and this would lead to a diversion of investment and immigration toward Ontario.

7. Energy Prices*

	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2025	2016-2025
Canadian Crude Oil	-6.7	0.0	2.6	1.1	0.9	0.7	0.3
Natural Gas	-13.3	3.5	4.2	4.0	2.8	1.0	0.9

* Annual average percent change in price (with CPI inflation removed).

Since our last long-term forecast, prepared in late August 1990, the world oil market has experienced dramatic changes in response to the developments in the Persian Gulf after Iraq's August 2 invasion of Kuwait. Initially, crude oil prices soared to the highest level in over four years on either expectation of imminent supply shortages in case of prolonged stand-off or on speculation that the Saudi Arabian oil supply would be disrupted in case of war.

However, Saudi Arabia (the world's biggest crude exporter), with some other producers, more than compensated for any losses stemming from the Gulf conflict. So, when the war started in mid-January, the world oil market was already oversupplied. After it became evident that Iraq did not have the military capability to disrupt world oil supplies, world oil prices declined below US$20 per barrel in February 1991. Since the end of the war, the oil market has remained very stable with prices hovering in the narrow range of US$20 to US$22 for WTI, approaching the level projected in last year's forecast.

The medium term price projections have remained almost the same as in last year's forecast and the world oil price is expected to average around US$25 in 1995. Stronger pressure on world oil prices is expected to resume in the 1990s, especially in the second half of the decade. This pressure will come mainly from stronger demand for oil, limited growth potential in non-OPEC production, increased OPEC control of the market, and higher incremental cost of non-OPEC oil. The world oil price is projected to be about US$23 per barrel (in 1990$) by 2000 and about US$25.50 by the year 2010.

Deregulation of the domestic oil market is expected to continue. Canadian crude oil prices are projected to move with the trend in international oil prices, subject to exchange rate and transportation cost adjustments. In 1991, the Ontario Refiners' Acquisition Cost (ORAC) is projected to average around $26.50 per barrel, escalating to about $30.70 (in 1990$) by 2000 and to about $34 by 2010.

The Canadian natural gas market has remained very weak during the last few years. Deregulation of the natural gas market at a time of substantial surplus of gas both in Canada and the United States, combined with deliverability limitations on the existing pipeline system, have depressed domestic prices to levels not seen in 10 years. The gas market has been so weak that it has remained practically indifferent even to the substantial increase of oil prices during the first few months of the Middle-East conflict.

The excess capacity of Alberta gas is expected to continue through 1993, as domestic demand growth remains sluggish and export demand is constrained by pipeline capacity. Beginning in 1993/94, however, substantial new export pipeline capacity should become available to Alberta producers. At the same time stronger demand from the United States is expected. The need for Ontario consumers to compete with new U.S. customers in this period (in whose regional markets higher prices are expected to prevail), as well as the onset of expected increases in North American gas demand, are expected to push prices upward.

Our long-term gas price projections have changed only slightly from year's forecast. However, small adjustments to the dynamics of price changes have been made throughout the forecast period. After the initial price push expected around 1994/95, in the second half of the 1990s gas prices are projected to grow slightly more slowly than in last year's forecast. At the same time, the combination of a tighter U.S. market, increasing cost of marginal supplies, stronger demand for gas for electricity generation and a general preference for that fuel for environmental reasons is expected to push gas prices higher in the first decade of the next century.

1.0 FORECAST TABLES

1.1 ONTARIO

	Actual 1976-1980	1981-1985	1986-1990	Forecast 1991-1995	1996-2000	2001-2005	2006-2010	2011-2015
Annual Average Percentage Change:								
Real Gross Domestic Product	3.2	3.6	3.8	3.0	3.3	2.8	2.6	2.4
Consumer Price Index (Ont)	N/A	7.6	5.0	4.2	5.0	5.0	5.0	5.0
Average Hourly Earnings:								
Manufacturing	9.5	8.1	5.2	4.6	6.3	6.3	6.4	6.5
Construction	9.6	6.1	5.5	4.7	6.3	6.3	6.4	6.5
Population	1.0	1.0	1.6	1.3	1.2	1.0	1.0	0.9
Labour Force	2.6	1.8	2.1	1.6	1.6	1.5	1.2	0.9
Employment	2.5	1.6	2.5	1.8	1.6	1.5	1.2	0.9
Labour Productivity	0.7	1.9	1.2	1.1	1.7	1.3	1.4	1.5
Annual Average Rates:								
Unemployment Rate	6.7	8.7	5.9	7.5	5.1	4.7	4.7	4.4

1.2 CANADA

	Actual 1976-1980	1981-1985	1986-1990	Forecast 1991-1995	1996-2000	2001-2005	2006-2010	2011-2015
Economic Growth and Inflation: (Annual Avg Percentage Change)								
Real Gross Domestic Product	4.0	3.0	3.0	2.8	3.4	2.9	2.7	2.4
GDP Deflator	8.3	6.1	4.0	4.0	4.5	5.0	5.0	5.0
Consumer Price Index	8.7	7.4	4.5	4.2	5.0	5.0	5.0	5.0
Industrial Product Price (Mfg)	10.0	5.4	2.2	3.1	4.5	5.0	5.0	5.0
Average Hourly Earnings (Mfg)	10.1	8.1	4.5	4.5	6.3	6.3	6.4	6.5
Real Average Hourly Earnings	1.4	0.7	0.0	0.3	1.5	1.3	1.4	1.5
Interest Rates (Annual Avg Rate):								
Real Treasury Bill Rate*	1.3	4.8	5.8	4.6	4.0	3.5	3.2	3.5
Treasury Bill Rate	9.9	12.2	10.3	8.8	9.0	8.5	8.2	8.5
Bank Prime	11.1	13.8	11.6	10.0	10.4	9.8	9.5	9.8
Government of Canada Bonds:								
5 years	9.6	12.5	9.9	9.5	9.6	9.1	8.8	9.1
20 years	10.0	13.0	10.1	9.9	10.0	9.5	9.2	9.5
Canadian Dollar in US Cents	90.8	79.2	79.8	83.0	80.0	80.0	79.0	78.0
Net Capital Inflows (% of GDP)	2.6	1.4	2.4	2.5	2.5	1.5	1.0	0.0

* The nominal Treasury Bill Rate minus the rate of CPI increase.

1.3 UNITED STATES

	Actual 1976-1980	1981-1985	1986-1990	<----Forecast 1991-1995	1996-2000	2001-2005	2006-2010	2011-2015
Annual Average								
Percentage Change*:								
Real Gross National Product	3.4	2.6	2.8	2.1	2.2	2.0	1.8	1.8
Consumer Prices	8.9	5.5	4.0	4.2	5.0	5.0	5.0	5.0
Compensation per Hour	9.0	5.8	4.9	4.7	6.2	6.3	6.3	6.3
Average Annual Rate:								
Treasury Bill Rate	7.8	10.0	6.8	6.4	7.1	6.8	6.6	7.0
Real Treasury Bill Rate	-1.1	4.5	2.8	2.2	2.1	1.8	1.6	2.0
Government Bond Yields:								
5 year maturity	8.6	11.5	7.7	7.8	7.8	7.6	7.2	7.7
30 year maturity	8.9	11.8	8.4	8.4	8.2	8.1	7.6	8.1
Canada-U.S. Interest Differentials:								
Treasury Bills	2.1	2.2	3.5	2.4	1.9	1.7	1.6	1.5
Long-Term Bond Yields	1.1	1.2	1.7	1.5	1.8	1.4	1.6	1.4

* These forecasts are mainly derived from Data Resources Inc.

1.4 ONTARIO INDUSTRIAL STRUCTURE

	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015
PRIMARY	6.7	5.0	4.7	4.0	3.5	3.2	2.9	2.6	2.4	2.2
Agriculture & Rel. Serv. (01, 02)	2.5	2.5	2.2	1.8	1.3	1.3	1.2	1.0	0.9	0.9
Fishing, Hunting & Trap. (03)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Logg. & Forestry & F. Serv. (04,	0.5	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Mining & Min. Serv. (06-09)	3.6	2.2	2.1	1.8	1.8	1.5	1.3	1.2	1.1	1.0
MANUFACTURING	26.9	26.1	25.6	27.2	25.5	25.2	24.8	24.5	24.2	23.8
Food prod. (10)	2.4	2.2	2.3	2.3	2.0	1.9	1.8	1.8	1.8	1.8
Beverage (11)	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3
Tobacco prod. (12)	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Rubber prod. (15)	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3
Plastic prod. (16)	0.3	0.3	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.7
Leather, Text. & Clothing (17-19,	1.3	1.2	1.4	1.3	1.1	1.0	0.9	0.8	0.8	0.7
Wood prod. (25)	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Furniture & Fixture (26)	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Pulp, Paper & All. Prod. (27)	1.9	1.4	1.6	1.3	1.1	1.2	1.2	1.1	1.1	1.1
Printing & Publishing (28)	1.3	1.3	1.5	1.5	1.3	1.4	1.4	1.5	1.5	1.5
Primary Metal prod. (29)	3.6	3.0	2.4	2.2	1.9	1.8	1.7	1.6	1.5	1.4
Fabricated Metal prod. (30)	2.9	2.7	2.5	2.2	2.1	2.2	2.1	2.0	2.0	2.0
Machinery (31)	1.6	1.6	1.8	1.3	1.2	1.1	1.1	1.2	1.2	1.2
Transportation Equipment (32)	3.1	4.4	3.1	5.2	4.3	4.1	4.2	4.3	4.3	4.2
Electrical & Electron. prod. (33)	1.8	1.9	2.4	3.4	4.5	4.6	4.8	4.9	4.9	5.0
Non-Metal. Mineral prod. (35)	0.9	1.0	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.4
Ref. Petroleum & Coal prod. (36)	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Chemical & Chem. prod. (37)	1.8	1.6	1.9	2.0	1.9	1.9	1.8	1.7	1.7	1.6
Other Manufacturing (39 +)	1.1	1.1	1.0	1.0	0.7	0.7	0.7	0.7	0.7	0.7
CONSTRUCTION (40-44)	6.7	6.4	5.9	6.1	7.1	6.1	6.1	6.0	5.9	5.8
UTILITIES (49)	2.3	2.5	2.7	2.5	2.3	2.3	2.2	2.2	2.2	2.2
SERVICES (bus.& n-b.sect.)	50.1	52.4	54.4	53.9	55.6	57.0	58.0	58.9	59.8	60.7
Transport. & Stor. & Commun. (45-	5.8	6.1	7.2	7.3	8.1	8.8	9.2	9.5	9.9	10.1
Wholesale & Retail Trade (50-69)	11.4	11.4	10.8	11.6	11.5	11.0	10.9	10.8	10.7	10.6
F.I.R.E. (70-76)	13.8	14.6	15.8	15.2	16.6	17.4	17.9	18.2	18.4	18.6
C.B.P.S. (77, 85, 86, 91, 92)	19.1	20.3	20.5	19.8	19.5	19.9	20.1	20.4	20.8	21.3
PUBLIC ADMINISTRATION (81-84)	7.3	7.6	6.7	6.3	5.9	6.2	6.0	5.7	5.5	5.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1.5 ENERGY

	ACTUAL					FORECAST					
	1990	1991	1992	1993	1994	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2025
	<----------dollars---------->					<----------annual percentage change---------->					
WORLD OIL PRICES											
$ per Barrel											
International Oil Price											
FOB Cost US Imports											
Annual Average Price											
Current US Dollars	21.00	18.40	19.40	21.00	23.00	3.5	7.9	6.2	5.7	5.7	5.4
Constant US 1990 Dollars	21.00	17.60	17.80	18.50	19.50	-0.7	2.7	1.2	0.7	0.7	0.4
West Texas Intermediate											
at Chicago											
Current US Dollars	25.09	21.80	22.50	24.00	25.50	1.9	7.6	6.2	5.7	5.7	5.3
Constant US 1990 Dollars	25.09	20.80	20.60	21.20	21.60	-2.3	2.5	1.1	0.7	0.7	0.3
CANADIAN CRUDE OIL											
AND NATURAL GAS PRICES											
Canadian $ per Barrel:											
Ontario Refiners' Acquisition											
Cost (Light Crude)											
Annual Average Price											
Current Dollars	27.00	26.50	25.20	28.00	30.70	4.2	7.7	6.1	6.0	5.7	5.3
Constant 1990 Dollars	27.00	25.20	23.20	24.80	26.20	0.0	2.6	1.1	0.9	0.7	0.3
Natural Gas:											
Canadian $ per Million Btu:											
Average Toronto Citygate											
Annual Average Price											
Current Dollar	2.55	2.48	2.65	2.95	3.28	7.8	9.4	9.1	7.9	6.1	5.9
Constant 1990 Dollars	2.55	2.36	2.44	2.62	2.80	3.5	4.2	4.0	2.8	1.0	0.9

Table A.1 Historical and Forecast Data - Rates and Percent Changes

	Growth (1) GDP			Consumer Price (1) Index			Population (1)	Labour Force (1)	Employment (1)	Unemployment Rate (2)	Labour Productivity (1)
Year	U.S.	Can.	Ont.	U.S.	Can.	Ont.(3)	Ont.	Ont.	Ont.	Ont.	Ont.
1964	5.3	6.7	7.3	1.3	1.8	N/A	2.3	3.3	3.9	3.2	3.3
1965	5.8	6.6	6.3	1.6	2.5	N/A	2.4	2.3	3.0	2.5	3.2
1966	5.8	6.8	7.0	3.0	3.7	N/A	2.5	6.2	6.1	2.6	0.8
1967	2.9	2.9	4.2	2.8	3.6	N/A	2.4	3.8	3.1	3.2	1.0
1968	4.1	5.4	6.6	4.3	4.1	N/A	1.9	3.1	2.6	3.6	3.8
1969	2.4	5.4	5.8	5.5	4.5	N/A	1.7	3.3	3.7	3.2	2.0
1970	-0.3	2.6	2.2	5.8	3.3	N/A	2.2	3.2	1.9	4.4	0.3
1971	2.8	5.8	5.9	4.3	2.8	N/A	2.0	3.6	2.5	5.4	3.3
1972	5.0	5.7	6.3	3.3	4.8	N/A	1.4	3.6	4.0	5.0	2.1
1973	5.2	7.7	4.8	6.1	7.6	N/A	1.3	3.6	4.4	4.3	0.4
1974	-0.5	4.4	3.1	11.1	10.9	N/A	1.7	4.4	4.2	4.4	-1.0
1975	-1.3	2.6	0.6	9.2	10.7	N/A	1.5	3.6	1.5	6.3	-0.9
1976	4.9	6.2	6.7	5.8	7.5	N/A	1.2	1.7	1.9	6.2	4.8
1977	4.7	3.6	3.5	6.5	8.0	N/A	1.1	2.7	1.8	7.0	1.7
1978	5.3	4.6	3.8	7.6	8.9	N/A	1.0	3.7	3.4	7.2	0.4
1979	2.5	3.9	2.5	11.3	9.1	N/A	0.7	3.3	4.1	6.5	-1.6
1980	-0.2	1.5	-0.3	13.5	10.2	10.3	0.8	1.6	1.5	6.8	-1.8
1981	1.9	3.7	4.0	10.3	12.4	12.0	0.7	2.6	2.9	6.5	1.0
1982	-2.5	-3.2	-3.9	6.2	10.8	10.7	0.9	0.9	-2.6	9.9	-1.3
1983	3.6	3.2	4.3	3.2	5.8	6.2	1.1	1.3	0.6	10.3	3.7
1984	6.8	6.3	9.0	4.3	4.3	4.9	1.2	2.1	3.6	9.0	5.2
1985	3.4	4.8	4.4	3.6	3.9	4.1	1.2	2.2	3.4	8.0	1.1
1986	2.7	3.3	6.2	2.0	4.2	4.4	1.2	2.2	3.4	7.0	2.7
1987	3.4	4.2	4.4	3.6	4.4	5.1	1.6	2.7	3.6	6.1	0.8
1988	4.5	4.7	5.8	4.0	4.0	4.7	1.7	2.5	3.7	5.0	1.9
1989	2.5	2.5	3.0	4.8	5.0	5.8	1.7	1.9	1.8	5.1	1.2
1990	1.0	0.5	-0.6	5.4	4.8	4.8	1.6	1.0	-0.2	6.3	-0.4
1991	-0.1	-1.3	-1.6	4.4	5.8	5.0	1.5	1.1	-2.2	9.4	0.6
1992	2.7	3.5	3.9	3.8	3.4	3.5	1.3	1.6	2.6	8.5	1.3
1993	3.0	3.5	4.0	4.0	3.5	3.8	1.3	1.7	3.0	7.3	1.0
1994	2.5	4.0	4.5	4.5	4.0	4.0	1.3	1.8	2.7	6.5	1.8
1995	2.5	4.5	4.0	4.5	4.5	4.5	1.3	1.8	3.0	5.6	1.0
1996-2000	2.2	3.4	3.3	5.0	5.0	5.0	1.2	1.6	1.6	5.1	1.7
2001-2005	2.0	2.9	2.8	5.0	5.0	5.0	1.0	1.5	1.5	4.7	1.3
2006-2010	1.8	2.7	2.6	5.0	5.0	5.0	1.0	1.2	1.2	4.7	1.4
2011-2015	1.8	2.4	2.4	5.0	5.0	5.0	0.9	0.9	0.9	4.4	1.5

1. Average Annual Percent Change. GNP for US
2. Percent
3. Statistics Canada, Ontario Composite CPI

Table A.1 (Cont'd) Historical and Forecast Data - Rates and Percent Changes

	Average Hourly Earnings Manufacturing (1)		Construction	90 Day T-Bill Rate	Prime Rate	Treasury Bill Rate	Government of Canada Bonds		Canadian Dollar (3)
Year	Can.	Ont.	Ont.	Canada (2)		U.S. (2)	5 Year (2)	20 Year (2)	(US cents)
1964	3.6	4.0	4.0	3.7	5.8	3.5	4.7	5.2	92.7
1965	4.8	5.3	9.6	4.0	5.8	3.9	4.9	5.2	92.8
1966	6.1	5.1	9.6	5.0	6.0	4.9	5.5	5.7	92.8
1967	7.0	6.6	8.8	4.6	5.9	4.3	5.6	5.9	92.7
1968	7.4	7.4	8.1	6.3	6.9	5.3	6.7	6.7	92.8
1969	8.2	8.4	11.9	7.2	8.0	6.7	7.7	7.6	92.9
1970	8.0	8.5	16.1	6.0	8.2	6.4	7.1	7.9	95.8
1971	8.9	8.8	12.0	3.6	6.5	4.3	5.6	6.9	99.0
1972	7.8	7.8	9.6	3.6	6.0	4.1	6.3	7.2	100.9
1973	8.9	8.9	9.6	5.5	7.6	7.0	7.0	7.6	100.0
1974	13.4	11.5	10.9	7.8	10.8	7.8	8.1	8.9	102.3
1975	15.7	14.4	11.6	7.4	9.4	5.8	7.7	9.0	98.3
1976	13.8	13.2	14.2	8.9	10.0	5.0	8.4	9.2	101.4
1977	10.8	10.2	12.1	7.3	8.5	5.3	7.9	8.7	94.1
1978	7.2	6.7	5.5	8.7	9.7	7.2	9.0	9.3	87.7
1979	8.8	8.3	6.6	11.7	12.9	10.1	10.4	10.2	85.4
1980	10.1	9.3	9.6	12.8	14.3	11.4	12.4	12.5	85.5
1981	12.0	11.7	11.0	17.7	19.3	14.0	15.7	15.2	83.4
1982	11.7	11.4	8.3	13.7	15.8	10.6	14.0	14.3	81.1
1983	7.0	7.2	6.5	9.3	11.2	8.6	10.6	11.8	81.1
1984	5.9	6.3	1.5	11.1	12.1	9.5	11.9	12.8	77.2
1985	3.9	4.0	3.3	9.4	10.6	7.5	10.4	11.0	73.2
1986	3.1	4.3	3.5	9.0	10.5	6.0	9.2	9.5	72.0
1987	3.5	3.7	6.9	8.1	9.5	5.8	9.4	10.0	75.4
1988	4.9	5.4	3.7	9.5	10.8	6.7	9.8	10.2	81.3
1989	5.5	4.9	6.4	12.1	13.3	8.1	10.2	9.9	84.5
1990	5.6	5.6	7.0	12.7	13.9	7.3	11.0	10.7	85.9
1991	5.5	5.0	6.0	8.8	9.9	5.5	9.5	10.0	87.0
1992	4.2	4.0	3.5	8.5	9.6	5.9	9.5	9.8	85.5
1993	4.0	4.0	4.0	8.8	9.9	6.5	9.4	9.8	82.5
1994	4.5	5.0	5.0	9.0	10.2	6.8	9.7	10.0	80.0
1995	4.5	5.0	5.0	9.0	10.4	7.4	9.6	10.0	80.0
1996-2000	6.3	6.3	6.3	9.0	10.4	7.1	9.6	10.0	80.0
2001-2005	6.3	6.3	6.3	8.5	9.8	6.8	9.1	9.5	80.0
2006-2010	6.4	6.4	6.4	8.2	9.5	6.6	8.8	9.2	79.0
2011-2015	6.5	6.5	6.5	8.5	9.8	7.0	9.1	9.5	78.0

1. Average Annual Percent Change
2. Percent
3. Statistics Canada, Ontario Composite CPI

Table A.2 Historical and Forecast Data - Levels and Indexes

	Real Growth		Cost Indicators						Ontario Demographic Variables			
	GNP	GDP	Consumer Price Index			Average Hourly Earnings (7)				Labour		Labour
Year	U.S.(1)	Can.(2)	Ont.(2)	U.S.(3)	Can.(4)	Ont.(4,8)	Can.	Manufac Ont.	Constr. Ont.	Population(5)	Force	Employment	Productivity(6)
1964	1973	203382	82221	31.0	25.1	N/A	1.92	2.06	2.08	6627	2567	2483	33114
1965	2088	216802	87396	31.5	25.7	N/A	2.01	2.17	2.28	6783	2625	2558	34166
1966	2208	231519	93475	32.5	26.6	N/A	2.14	2.28	2.50	6954	2787	2714	34442
1967	2271	238306	97385	33.4	27.6	N/A	2.29	2.43	2.72	7122	2891	2799	34793
1968	2366	251064	103789	34.8	28.7	N/A	2.45	2.61	2.94	7258	2980	2873	36126
1969	2423	264508	109818	36.7	30.0	N/A	2.65	2.83	3.29	7385	3077	2979	36864
1970	2416	271372	112252	38.8	31.0	N/A	2.87	3.07	3.82	7549	3177	3037	36961
1971	2485	286998	118830	40.5	31.9	N/A	3.12	3.34	4.28	7699	3290	3113	38172
1972	2609	303447	126272	41.8	33.4	N/A	3.37	3.60	4.69	7806	3410	3239	38985
1973	2744	326848	132279	44.4	35.9	N/A	3.67	3.92	5.14	7911	3532	3380	39136
1974	2729	341235	136440	49.3	39.9	N/A	4.16	4.37	5.70	8048	3686	3523	38728
1975	2695	350113	137227	53.8	44.2	N/A	4.81	5.00	6.36	8167	3818	3576	38374
1976	2827	371688	146481	56.9	47.5	N/A	5.47	5.66	7.26	8262	3882	3643	40209
1977	2959	385122	151654	60.6	51.3	N/A	6.07	6.24	8.14	8350	3986	3708	40899
1978	3115	402737	157443	65.2	55.9	N/A	6.50	6.66	8.59	8435	4133	3835	41054
1979	3192	418328	161308	72.6	61.0	60.4	7.07	7.21	9.16	8498	4271	3993	40398
1980	3187	424537	160777	82.4	67.2	66.6	7.79	7.88	10.04	8564	4350	4053	39669
1981	3249	440127	167162	90.9	75.5	74.6	8.72	8.80	11.14	8621	4463	4171	40077
1982	3166	425970	160702	96.5	83.7	82.6	9.75	9.80	12.07	8699	4502	4063	39553
1983	3279	439448	167691	99.6	88.5	87.7	10.43	10.51	12.86	8795	4561	4089	41010
1984	3501	467167	182755	103.9	92.4	92.0	11.04	11.17	13.05	8901	4655	4235	43153
1985	3619	489437	190881	107.6	96.0	95.8	11.47	11.61	13.48	9007	4758	4377	43610
1986	3718	505666	202710	109.7	100.0	100.0	11.83	12.11	13.95	9115	4862	4524	44808
1987	3845	526730	211708	113.7	104.4	105.1	12.24	12.55	14.92	9264	4992	4689	45150
1988	4017	551423	223997	118.3	108.6	110.0	12.84	13.23	15.47	9426	5118	4862	46071
1989	4118	564990	230677	124.0	114.0	116.4	13.55	13.88	16.46	9583	5214	4949	46611
1990	4159	567541	229293	130.7	119.5	122.0	14.31	14.66	17.61	9738	5268	4937	46444
1991	4155	560163	225624	136.4	126.4	128.1	15.10	15.39	18.67	9882	5327	4829	46728
1992	4267	579769	234424	141.6	130.7	132.6	15.73	16.01	19.32	10012	5415	4954	47320
1993	4395	600061	243801	147.3	135.3	137.6	16.36	16.65	20.10	10146	5505	5104	47770
1994	4505	624063	254869	153.9	140.7	143.1	17.10	17.48	21.10	10283	5604	5241	48626
1995	4617	652146	265064	160.8	147.1	149.6	17.86	18.35	22.16	10416	5702	5396	49122
2000	5148	770810	311783	205.3	187.7	190.9	24.25	24.91	30.07	11054	6169	5853	53266
2005	5684	889251	357598	262.0	239.5	243.6	32.91	33.81	40.81	11644	6633	6318	56599
2010	6214	1015960	406171	334.3	305.7	310.9	44.88	46.10	55.66	12209	7051	6720	60445
2015	6794	1143869	457080	426.7	390.2	396.8	61.49	63.17	76.25	12758	7366	7041	64912

1. Billions of 1982 Dollars
2. Millions of 1986 Dollars
3. 1982 to 1984 = 100
4. 1986 = 100
5. Thousands
6. 1986 Dollars
7. Dollars
8. Statistics Canada, Ontario Composite CPI